MULTIMEDIA UNIVERSITY

# MULTIMEDIA UNIVERSITY

# FINAL EXAMINATION

**TRIMESTER 2, 2019/2020**

## BAC3674 – ADVANCED MANAGEMENT ACCOUNTING

( All sections / Groups )

9th MARCH 2020
2.30 p.m. – 5.30 p.m.
( 3 Hours )

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**INSTRUCTIONS TO STUDENTS**

1. This Question paper consists of 8 pages (excluding the cover page) with 4 Questions only.

2. Attempt **ALL FOUR** questions. All questions carry equal marks and the distribution of the marks for each question is given.

3. Please write all your answers in the Answer Booklet provided.

## Question 1

Mesiniaga Berhad is a manufacturer of industrial machinery and organized into two divisions. Mega Steel Division manufactures steel plates. The Industrial Machinery Division uses the steel plates to make machines. Mesiniaga treats both of them as investment centres.

Mesiniaga monitors its two divisions using Return on Investment (ROI) with investments defined as average operating assets employed. Mesiniaga also uses the ROI to determine management bonuses. All investments in operating assets are expected to earn a minimum return of 11% before income taxes. All these years, Mega Steel's ROI has ranged between 11.8% to 14.7%. During the financial year ended 31 December 2018, Mega Steel contemplated a capital acquisition with an estimated ROI of 11.5%, but its division management however decided against the acquisition because they believe it would decrease Mega Steel's overall ROI.

| **Mega Steel Division Operating Profit Statement for the year ending 31 December 2018** | | |
|---|---|---|
| Revenue | | RM 25,000,000 |
| Cost of goods sold | | 16,500,000 |
| Gross profit | | 8,500,000 |
| Operating costs: | | |
| Administrative | RM 3,955,000 | |
| Marketing | 2,700,000 | |
| Total operating costs | | 6,655,000 |
| Operating profit | | RM 1,845,000 |

The division's operating assets employed were RM15,750,000 at 31 December 2018, a 5% increase over the previous year-end balance.

**Required:**

a. Calculate the return on investment (ROI) in average operating assets employed for 2018 for the Mega Steel Division. (8 marks)

b. Calculate Mega Steel Division's residual income (RI) on the basis of average operating assets employed. (4 marks)

c. Would the management of Mega Steel Division have been more likely to accept the investment opportunity it had in 2018 if RI were used as a performance measure instead of ROI? Explain. (6 marks)

**Continued...**

d. What changes to the divisional manager's compensation contract might corporate management make that would better align divisional manager's compensation (and performance evaluation) with overall corporate goals? (7 marks)

**(Total: 25 marks)**

**Question 2**

**Part A**

Flexcell Bhd is considering investing in the production of a new technology, a handheld communication device, the target market is young undergraduates. The estimated investment cost for this project is RM100 million with 3 year project life. Demand for the product, and therefore the project risk, is a function of the demand for Internet connections. The CFO working with marketing, currently estimates a 25% chance that such demand will be high, a 50% probability that demand will be medium, and a 25% probability that demand will be low. Associated after tax cash flows under each of these three market scenarios are estimated as follows: RM70 million, RM50 million, and RM5 million. For projects of this nature, a 15% discount rate (equal to the firm's weighted average cost of capital) is assumed.

Because starting the project immediately on day 1 results in negative NPV of RM0.109 million, management of the company has decided to avoid risk by delaying the implementation of the project for 1 year, i.e. to wait and see. It will still spend RM100 million investment cost, and expects to maintain customer demands of RM70 million and RM50 million if customer demands are high or medium respectively. However, if customer demand turns out to be low after 1 year, then no investment will be made.

At 15% discount rate, the present value (PV) factors are: Year 1 (0.870), Year 2 (0.756), Year 3 (0.658), Year 4 (0.572).

**Required:**

a. Using the above information, compute the Net Present Value (NPV) if the company delayed the project for 1 year. (10 marks)
b. Holding everything else constant, what is the expected NPV of the decision if the probabilities for the three scenarios (after 1 year) are as follows: high (20%), medium (48%), and low (32%)? (4 marks)
c. From your answers in (a) and (b) above, what conclusion can be derived, and why? (3 marks)

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**Part B**

Cost management is the development and use of cost management information by management accountant. Cost management information is needed for each of the four management functions; strategic management, planning and decision making, management and operational control, and preparation of financial statements.

**Required:**

Briefly describe how cost management information is used in the FOUR management functions. (8 marks)

**(Total: 25 marks)**

**Question 3**

**Part A**

TMS Sdn. Bhd.(TMS) produces sub-assemblies used in its parent company, BSA Sdn. Bhd.'s final product. Sales have increased each year but the price of raw material and other production costs keep increasing, causing its profit margin to drop from 40% to 20%.

Mas is the manager of TMS's profit planning department and was given the responsibility to determine whether TMS should purchase the sub-assemblies from a cost efficient outside producer (outsourcer), SMS Sdn. Bhd.(SMS).

Mas has just received a report indicating that SMS could supply the entire annual output of 30,000 sub-assemblies for RM500,000 for next year, 2021, which is RM322,000 lower than its current production costs for 25,000 sub-assemblies for year 2020.

Mas believes that TMS will have to close its production operations to realise the "RM322,000 in annual cost savings".

TMS budgeted production costs for 25,000 sub-assemblies for current year 2020 follows:

**Continued...**

| | RM('000) | RM('000) |
|---|---|---|
| **Direct Materials (note 1)** | | **280** |
| **Direct Labour (note 2)** | | **280** |
| **Overhead:** | | |
| Depreciation-equipment & building | 72 | |
| Equipment leasing costs **(note 3)** | 20 | |
| Pension expense **(note 4)** | 28 | |
| Plant manager and staff **(note 5)** | 22 | |
| Other manufacturing overhead **(note 6)** | 70 | |
| Factory space rental **(note 7)** | 50 | **262** |
| **Total budgeted production costs (if produced internally)** | | **822** |

Additional facts regarding the plant's operations are as below:

**Note 1:**

TMS maintains excellent record of customer service and reliability and is committed to use high quality material. It has signed a one-year supply contract, if these orders are cancelled, TMS has to pay termination penalty amounting to 10% of the cost of direct material for next year.

The direct material costs used in the production of sub-assemblies is expected to increase 10% next year.

**Note 2:**

Malaysian government's directive to increase next year minimum wage will collectively resulted in a 5% increase in wage next year.

A clause in TMS's contract with the union, TMS has to pay RM60,000 as employment compensation to its former employees.

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**Note 3:**

TMS can terminate this lease by paying the equivalent of 2 month's lease payment for each of the three years left on its lease agreement.

**Note 4:**

Some employees would elect early retirement and RM20,000 would continue whether the plant is open or shut down.

**Note 5:**

TMS's staff will continue to work in other department if the plant is closed.

**Note 6:**

30% of other manufacturing overhead is considered variable. Variable overhead changes with the number of sub-assemblies produced and this rate is not expected to change in 2021.

**Note 7:**

The facilities used to manufacture the sub-assemblies are rented under a month-to-month rental agreement. TMS would have no need for this space if it does not produce the sub-assemblies. Thus, TMS can withdraw from the rental agreement without any penalty.

**Required:**

a. Prepare a cost analysis that shows whether TMS should make or buy the sub-assemblies from SMS. (15 marks)

b. Identify and discuss the FIVE strategic/qualitative factors that TMS should consider in this decision. (5 marks)

**Part B**

Cheezy Pizza Sdn. Bhd. (CPSB) wishes to estimate the committed (fixed) and variable costs per pizza production and had collected the following data from the accounting records:

**Continued...**

| Month | Pizza Production Costs (RM) | Number of Pizzas Produced |
|---|---|---|
| 1 | 30,800 | 13,300 |
| 2 | 42,100 | 15,400 |
| 3 | 33,400 | 12,600 |
| 4 | 33,000 | 12,500 |
| 5 | 36,600 | 14,800 |
| 6 | 31,200 | 9,800 |
| 7 | 30,400 | 9,800 |
| 8 | 34,100 | 10,200 |
| 9 | 41,300 | 14,700 |
| 10 | 27,560 | 8,400 |

All computations are to be rounded up to its nearest 2 decimal points.

**Required:**

a. Use the high-low method to estimate the fixed and variable portions of overhead costs based on number of pizzas produced. (2 marks)

b. What is the estimated total variable cost for a month in which 5,000 pizzas are produced? (1 mark)

c. CPSB has heard that the high-low method has a major limitation compared to simple regression. What is it? (2 mark)

**(Total: 25 marks)**

**Question 4**

**Part A**

Premium Furniture Sdn. Bhd. (PF) is a distributor and producer of three different brand of quality furniture. PF employs skilled workers to work on the furniture and they are paid RM20 per hour. The major cost lies in raw material, but there is also a substantial amount of manufacturing overhead in the automated manufacturing processes. The company uses relatively little direct labour.

**Continued...**

Some of the furniture are very popular and sell in large quantity, while some have very low quantity. PF prices its products at full product cost plus a mark-up of 30%. The company competes primarily on the quality of its product, but customers are also price conscious.

A traditional product costing system is used at present, although an activity based costing (ABC) system is being considered. Currently, manufacturing overheads are applied on a machine hour basis.

Data for next year's budget for three best-selling products, Viva (V), Elegance (E) and Luxury (L) are:

| | **Labour hours /unit** | **Machine hours /unit** | **Materials Cost per unit (RM)** | **Production (units)** | **Sale (units)** |
|---|---|---|---|---|---|
| **Viva (V)** | 1 | 3 | 40 | 1,500 | 1,500 |
| **Elegance (E)** | 3 | 2 | 24 | 2,500 | 2,500 |
| **Luxury (L)** | 2 | 3 | 50 | 14,000 | 14,000 |

Total budgeted manufacturing overheads are RM2,884,000.

The financial controller of PF believes the traditional costing system may be providing misleading cost information. She has developed an analysis of the next year's manufacturing overheads as follows:

| **Activity** | **Cost pools (RM)** |
|---|---|
| Set ups | 1,009,400 |
| Machining | 576,800 |
| Material handling | 432,600 |
| Inspection | 865,200 |
| **Total** | **2,884,000** |

Total activity volumes associated with each product line for next year as a whole are as below:

**Continued...**

| | No. of set ups | No. of materials movements | No. of inspections | Machine hours |
|---|---|---|---|---|
| **Viva (V)** | 150 | 24 | 300 | 4,500 |
| **Elegance (E)** | 230 | 42 | 360 | 5,000 |
| **Luxury (L)** | 960 | 174 | 1,340 | 42,000 |
| **Total** | **1,340** | **240** | **2,000** | **51,500** |

All calculations are to be rounded to two decimal places.

**Required:**

a. Using PF's current traditional costing system, determine the product costs and selling prices of the three products. (3 marks)

b. Calculate the product cost per unit and selling prices for each product using activity based costing. (12 marks)

c. Compare the costs of the products calculated in (a) and (b). Provide an explanation as to why the product costs using traditional costing system are different from those using ABC system. Use the information from PF to illustrate (Hints: prepare a table of activities per 1,000 units produced). (6 marks)

**Part B**

MDF Sdn. Bhd. manufactures and sell squash racquet, Winner. The market price for Winner has been RM220 per unit but competitive pressures have reduced the market price to RM200 per unit. The initial total cost is RM180 per unit (including RM160 total manufacturing cost and RM20 non-manufacturing costs per unit).

**Required:**

a. What is the firm's target manufacturing cost per unit if the profit and non-manufacturing costs are to remain unchanged? (2 marks)

b. What two tools (methods) might the company use to achieve the cost reduction? (2 marks)

**(Total 25 marks)**

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